

Tuesday, June 28, 2016 10:10:05 AM

Page 1

Accept

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Required Date: 6/27/2016 **Req'd Qty:** 4.00 ***1***

Reference:

Run Start *NR1*

Stop ***NR2***

Draw Nbr	Revision Nbr
D5387	A

0.01

FLOW WATER JET

Waterjet

Memo

0.01

FLOW CNC Waterjet

1-Cut as per Dwg
Dwg Rev: A
Prog Rev: A
2-Deburr if necessary

110

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

QC

Quality Control

120

QC8- Inspect parts - second check

0.00

Memo

OC

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 148388

Tuesday, June 28, 2016 10:10:05 AM

148388

Page 2

Item ID: D5387-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Cover Mounting Bracket Assembly

Start Date: 6/27/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 6/27/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

130

Brake NC

NC BRAKE

0.00

Memo

0.00

Brake NC

1- Bend as per dwg

2- Dimple holes as per dwg

DAS
30
9-89

9x

16/08/10

DAS
36
9-89

140

140

QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.01

Quality Control

(9)

DAS
38
9-89

AUG 10 2016

150

150

HandFinish

Chemical Conversion Coat per QSI005 4.1

0.00

Memo

0.00

Hand Finishing

(9)

2016/08/11

BEB

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No: _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				
Date :	Step #:	QTY Effective :			MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By	
					Lead hand / Supervisor Approval Verification	
					QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY				
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER :						

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐	☐	Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐	☐	Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐	☐	Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐	☐	Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐	☐	Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐	☐	Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐	☐	Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐	☐	Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐	☐	Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐	☐	Manufacturing Process ☐		OTHER : _____			
Misidentified ☐	☐	Past Due ☐					

Tuesday, June 28, 2016 10:10:05 AM

1 48.388

Item ID: D5387-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Aft Cover Mounting Bracket Assembly

Stop

NS2

Start Date: 6/27/2016 **Start Qty:** 4.00

4

Cust Item ID:

Required Date: 6/27/2016 **Req'd Qty:** 4.00

4

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

[illegible]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

Work Order ID 148388

Tuesday, June 28, 2016 10:10:05 AM

148388

Page 5

Item ID: D5387-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Cover Mounting Bracket Assembly
Start Date: 6/27/2016 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 6/27/2016 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.00							
Quality Control									

DAS
21
9-89
AUG 3 1 2016

DAS
21
9-89
AUG 3 1 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐		☐	Temperature/Cure ☐	☐	Power Loss/Surge ☐
Design ☐	☐	Operator ☐		☐	Set-up ☐	☐	Folio/Program ☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Pressure/Forced ☐	BOM/Route ☐	☐	Grain ☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Bending ☐	Broken/Damage/Defect ☐	☐	Weld ☐
Handling/Pre ☐	☐	Training ☐	☐	Centre Not Concentric ☐	Inspection Incomplete/Unqualified ☐	☐	Wrong Stock Pulled ☐
Material ☐	☐	Use for Testing ☐	☐	Cracks ☐	Contamination ☐	☐	Out of Sequence ☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crimp/Kink/Ripple/Wave ☐	Countersink ☐	☐	Off-set ☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Cuffs ☐	Cut Too Short ☐	☐	Mislabeled ☐
LOA ☐	☐	Product Improvement ☐	☐	Crushing ☐	Instructions Incomplete/Unclear ☐	☐	Fit/Function ☐
Substation ☐	☐	Process Improvement ☐	☐	Heat Treat ☐	Drill Holes ☐	☐	Misaligned/off center ☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	Wave/Twist in Tube ☐			
Misidentified ☐	☐	Past Due ☐	☐	Marks/Chatter ☐			
				OTHER : ☐			

Picklist Print

Tuesday, June 28, 2016 10:10:04 AM

Page 1

Work Order ID: 148388

148388

Parent Item: D5387-041

D5387-041

Parent Item Name: Aft Cover Mounting Bracket Assembly

Start Date: 6/27/2016

Required Date: 6/27/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 16.04.19 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.032		Purchased	No			100	sf	144.4668	0.05	0.210526			

M6061T6S 032

6061-T6 Sheet 0.032"

PR 2016/08/03

Location

Loc Qty

Loc Code

MAT021

144.46675

m131352

48.1

m132772

2.895

m133757

93.47175

0.6

MS20426AD3-4

Purchased

No

190

Each

4,733.000

2

8

MS20426AD3-4

RIVET

16/08/30 DAS 36 9-89

Location

Loc Qty

Loc Code

GA

36

m131697

36

ST312

4697

m134294

4697

M135274
(18x)

MS21059L3

Purchased

No

190

Each

193.0000

1

4

MS21059L3

Nut Plate

16/08/30 DAS 36 9-89

Location

Loc Qty

Loc Code

CA

8

M129682

8

ST301

165

M135015

90

M135058

75

ST303

20

M133016

20

M127635
(9x)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

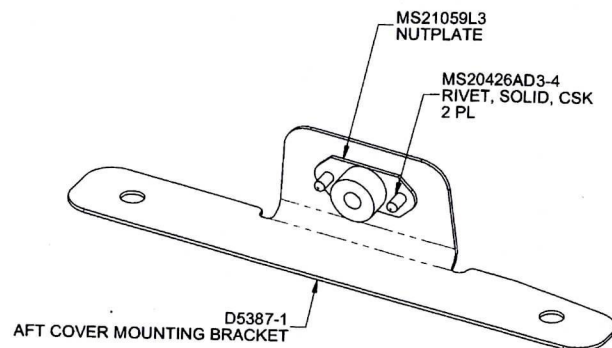
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
					QC / QA Coordinator Approval				

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐		☐	Temperature/Cure ☐	☐	Power Loss/Surge ☐
Design ☐	☐	Operator ☐		☐	Set-up ☐	☐	Folio/Program ☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Pressure/Forced ☐	BOM/Route ☐	☐	Grain ☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Bending ☐	Broken/Damage/Defect ☐	☐	Weld ☐
Handling/Pre ☐	☐	Training ☐	☐	Centre Not Concentric ☐	Inspection Incomplete/Unqualified ☐	☐	Wrong Stock Pulled ☐
Material ☐	☐	Use for Testing ☐	☐	Cracks ☐	Contamination ☐	☐	Out of Sequence ☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crimp/Kink/Ripple/Wave ☐	Countersink ☐	☐	Off-set ☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Cuffs ☐	Cut Too Short ☐	☐	Mislabeled ☐
LOA ☐	☐	Product Improvement ☐	☐	Heat Treat ☐	Instructions Incomplete/Unclear ☐	☐	Fit/Function ☐
Substation ☐	☐	Process Improvement ☐	☐	Wave/Twist in Tube ☐	Drill Holes ☐	☐	Misaligned/off center ☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	Marks/Chatter ☐			
Misidentified ☐	☐	Past Due ☐	☐	OTHER :			

ITEM	QTY -041	P/N	DESCRIPTION
	X	D5387-041	AFT COVER MOUNTING BRACKET ASSY
1	1	D5387-1	AFT COVER MOUNTING BRACKET
2	1	MS21059L3	NUTPLATE
3	2	MS20426AD3-4	RIVET, SOLID, CSK



D5387-041 AFT COVER MOUNTING BRACKET ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.03 lbs

RELEASED
2016-04-18
EIN 16-562

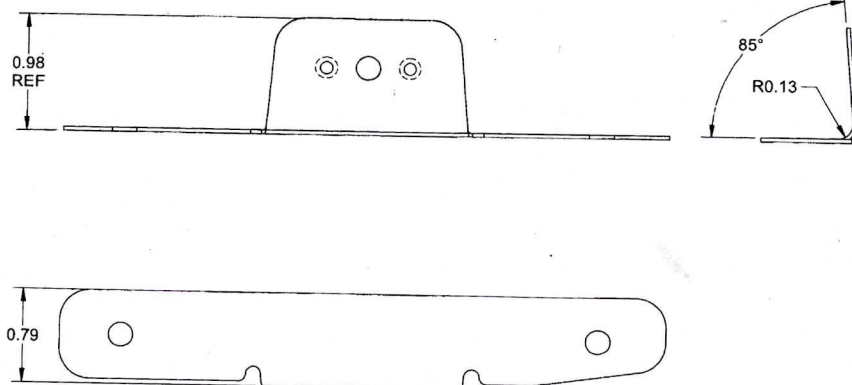
APPROVED

A		NEW ISSUE		MB	16.02.18
REV.	DESCRIPTION			BY	DATE
DESIGN	MB	DART AEROSPACE LTD		REV. A	
DRAWN	MB	HAWKESBURY, ONTARIO, CANADA		SHEET 1 OF 2	
CHECKED	AJS	DRAWING NO. D5387		SCALE	
MFG. APPR.	DD	TITLE		NTS	
APPROVED	WM	AFT COVER MOUNTING BRACKET ASSY			
DE APPR.	DS				
DATE	16.02.18				

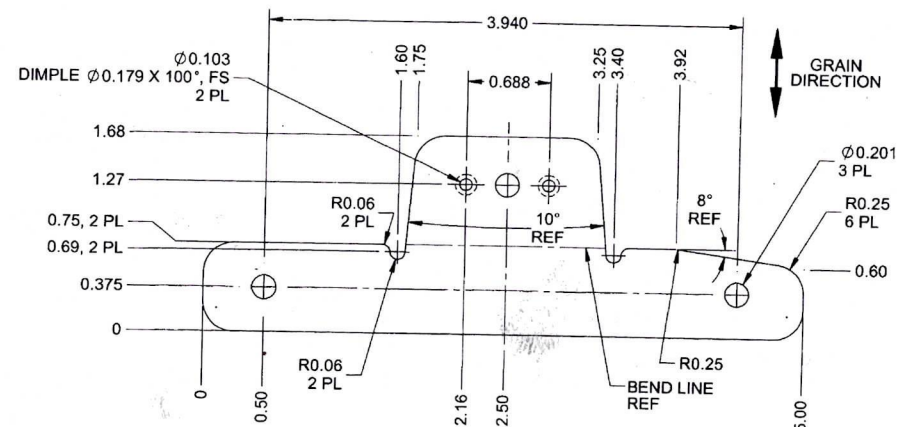
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SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 148388 MLJ
1607-05



D5387-1 AFT COVER MOUNTING BRACKET
(MAKE FROM D5387-1F)



D5387-1F FLAT PATTERN

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.032 THICK, PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209
REF: DART SPEC. M6061T6S.032
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT "BLACK SANDING" (4.3.5.7) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.02 lbs

RELEASED
2016-04-18

APPROVED

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MB		
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5387	SHEET 2 OF 2
APPROVED	WM	TITLE	SCALE
DE APPR.	DSC	AFT COVER MOUNTING BRACKET ASSY	NTS
DATE	16.02.18	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	